ISSUED BY THE

ASSOCIATION FOR THE ADVANCEMENT OF MEDICINE
BY RESEARCH.

OFFICIAL CIRCULAR

Addressed to the German Universities

BY THE

MINISTER OF PUBLIC INSTRUCTION

ENJOINING

SAFEGUARDS AGAINST ABUSES OF VIVISECTION.

With an Appendix

CONTAINING THE STATEMENTS OF THE
SEVERAL MEDICAL FACULTIES.

Extracted from the "White Book" presented to the Prussian Parliament.

ROYAL COLLEGE OF SURGEONS
21 JAN 9
LIBRARY

LONDON:
J. W. KOLCKMANN, 2 LANGHAM PLACE, W.
1885.

OFFICIAL CIRCULAR.

ROYAL COL LIBRARY
21 JAN 91

Ministry of Public Instruction, &c.
U 1, No. 415.

Berlin, *February* 2, 1885.

The answers returned to my circular of the 13th December 1883, U 1, 4123, addressed to the Medical Faculties with reference to what is known as the Vivisection question, have convinced me that in our National Universities experiments on animals are employed and performed on moderate and justifiable grounds, and not only serve the interests of scientific research and academical instruction, but also greatly serve the demands of humanity.

In order to set at rest all doubt for the future, I consider it expedient by a General Order to put on a surer footing the practice as hitherto carried on, beyond the possibility of individual deviations from the principles which have guided it.

With this object I direct as follows :—

1. Experiments on living animals are to be performed only with an earnest view to research, or for important objects of instruction.
2. Experiments on animals are allowable in lectures and demonstrations only in so far as they are absolutely necessary for a full understanding of the subject treated of.

3. The preparatory operations for these demonstrations are to be made, as a rule, before the beginning of the said demonstrations, and not before the auditory.

4. Experiments upon animals are to be made only by professors and tutors, or on their responsibility.

5. Experiments which can be made, without prejudice to the result, on the lower animals, are to be made on these only, and not on the higher animals.

6. In all cases in which the object of the experiment would not thereby be entirely frustrated, the animals must be rendered completely and continuously insensible by means of anæsthetics before the operation.

GOSSLER.

To all the Medical Faculties.

EXTRACT FROM THE REPORTS OF FACULTIES.

In answer to questions addressed officially by the Minister of Public Instruction, &c., to the several National Universities, in December 1883, the following statements, differing in fulness and importance, have been returned.

A. Vivisection as a Means of Research.

I.—*Does the Faculty consider Vivisection to be an indispensable method of research, which Medical Science cannot give up without positive damage to itself?*

The answers from the different Universities are as follow :—

Berlin.—The unanimous vote of the Faculty is that investigation by means of vivisection is an indispensable method, the renunciation of which would lead not only to positive damage, but to absolute paralysis of Medical Science and the annihilation of its further progress.

Bonn.—Voted unanimously : "Vivisectional researches—*i.e.*, experiments on living animals—are indispensable methods of research which Medical Science cannot renounce without positive damage to itself."

Breslau.—Unanimously : "Absolutely indispensable."

Göttingen.—"The entire Faculty answers the question with an emphatic 'Yes.'"

Greifswald.—"In answer to the first question we say that it is natural that the reasonable investigator will only have recourse to experiments *in corpore vili* when the result aimed at cannot be attained in any other way. But the Faculty are of one mind, that experiments on animals are an absolute necessity, and cannot be dispensed with in any of the various departments of medicine which have reference to the living human being."

Halle.—" After impartially weighing the facts of the case, and judging from serious consideration, and the experience, after many years, of most of its members, the Faculty comes to the unanimous conclusion, that experiments by vivisection are indispensable, and cannot be replaced by any other method of research ; tending generally to that accuracy in drawing conclusions from results which Medical Science cannot give up without positive damage to itself."

Kiel.—" The Faculty answers the question unanimously in the affirmative."

Königsberg.—" Affirmed unanimously."

Marburg.—" The question is unanimously answered in the affirmative by the Faculty."

B. Vivisection as a Means of Instruction.

II.—*Does the Faculty consider it possible to omit from the college courses, either entirely or in part, vivisectional demonstrations, without detriment to the right understanding of the questions to which they refer ?*

Berlin.—To this question "the Faculty must say unanimously and decidedly 'No.'"

Bonn.—" Unanimously the Faculty considers that it is impossible to omit from the College courses, either entirely or in part, vivisectional demonstrations, without detriment to the right understanding of the questions to which they refer."

Breslau.—Unanimously : " Absolutely impossible."

Göttingen.—" Taking this question as it stands, the Faculty answers it in the negative. It considers that a series of questions can during the lecture be placed in full scientific detail before the students only when the latter are able to follow, by means of vivisection, the illustration of what the teacher desires to impress upon them. Consequently vivisection is a means of demonstration and teaching in exactly the same way as experiments in Physics and Chemistry."

Greifswald.—Here again the Faculty are unanimous " that a certain number of experiments in the courses of lectures on Physiology and Therapeutics cannot be dispensed with, if the instruction of the student is to be seriously undertaken."

HALLE.—Unanimously: "The courses of lectures on Physiology, and in a less degree those on general Pathology and Histology, cannot be carried out properly in the absence of vivisectional demonstrations. A number of fundamental facts can only in this way be brought home to the mind of the student. If the teacher is limited to presenting these facts in words only, without further elucidation by experiment, no right conception of the most important processes going on in the living body is possible. The physician who day by day has to investigate at the bedside the condition of the heart and pulse, can have no clear notion of the heart's movement and the general circulation if he has never had the chance of seeing a pulsating heart, or the effect of its beat on the pressure of blood in an artery. The same holds good of other important demonstrations on the living animal, in the Physiology and Pathology of the nervous system, and of many other organs. As to the number of vivisectional demonstrations made, it is obvious that each teacher will for various reasons limit himself to the smallest possible number. As a matter of fact, the demonstration of certain fundamental experiments is sufficient to clear the way for a right understanding of complicated processes; and, in addition, the preparation and performance of vivisectional demonstrations are generally difficult, require an enormous expenditure of time, and are costly. There need be no hesitation, therefore, in leaving the number of experiments demonstrated to the discretion of the individual teacher. A statutory limitation, still more an absolute prohibition, of these experiments would lead to lamentable injury in questions of scientific Physiology and Medicine. The result would be that these studies would lose the character of a living science, and be degraded to the unfruitful standpoint of a dead knowledge of books. And most certainly we do not go too far in asserting that a lecture on Physiology without a demonstration on the living animal could only be compared to a lecture on Chemistry in which the demonstration of the combustion of oxygen was omitted."

KIEL.—"The Faculty answers the question emphatically with 'No.'"

KÖNIGSBERG.—"One member of the Faculty voted against the question, on the ground that he was ignorant of the number of demonstrations made; a second voted for 'partial omission'; the rest voted 'no.'"

MARBURG.—"All the members of the Faculty consider vivisectional experiments to be indispensable. The number of these experiments is limited, by the cost and the time at disposal, to the most necessary and the most important."

III.—*During what demonstrations are experiments on living animals exhibited?* And

IV.—*What is the number of experiments made in these demonstrations during the year on the animals mentioned below?*—

a. Cold-blooded animals (frogs, newts, &c.).
b. Birds.
c. Rabbits and guinea-pigs.
d. Dogs and cats.

BERLIN.—

1. Lectures by the Director of the Physiological Institute:

On living frogs, 15 experiments.
On birds, 1 experiment.
On rabbits and guinea-pigs, 11 experiments.
On dogs, 2 experiments.

2. Lectures by the Director of the Pharmacological Institute:

On cold-blooded animals, 10 experiments.
On rabbits, 5 experiments.

3. Physiological lectures of one professor, and Pharmacological lectures of one private tutor:

The Faculty report that in both these cases vivisectional demonstrations are made, mostly on frogs; and in the teaching of Toxicology somewhat oftener on rabbits and guinea-pigs, very seldom on birds (pigeons), and only once on a dog.

4. Two professors demonstrate on rabbits the operations for cataract and the formation of artificial pupil.

BONN.—

1. Physiological demonstrations:
   About 40–50 frogs, toads, and newts.
   1 pigeon.
   10–20 rabbits; guinea-pigs only exceptionally.
2. Demonstrations in General Pathology:
   30–60 frogs.
   6 rabbits.
3. Demonstrations in Pharmacology:
   30–40 frogs.
   20–25 rabbits.
   3–5 dogs; 1 cat.

BRESLAU.—

1. Physiological Demonstrations:
   16 frogs.
   1 pigeon.
   12–13 rabbits.
   6–7 dogs; 1 cat.
2. Demonstrations in General Pathology:
   6 frogs.
   6 rabbits.
   4 dogs.

There is no institute for Pharmacology in Breslau.

GÖTTINGEN.—

Experiments on animals are shown in the demonstrations on Physiology, General Pathology, and Toxicology: this number varies according to the needs of the demonstrator and the possibility of obtaining the particular kind of animal desired. The following numbers are as close as possible:

1. Physiological demonstrations:
   20 experiments on frogs.
   20 „ on mammals and birds.

2. Demonstrations in General Pathology :
    10 experiments on frogs.
    10 ,, on rabbits and guinea-pigs.
3. Demonstrations in Toxicology :
    20 experiments on frogs.
    10 ,, on warm-blooded animals.

GREIFSWALD.—

1. Physiological Demonstrations :
    6 experiments on frogs.
    1–2 ,, on pigeons.
    3 ,, on rabbits.

2. Course of Pathological Anatomy :
    8–10 rabbits.

3. Demonstrations in General Surgery :
    5 rabbits.
    5 dogs.

4. Demonstrations in Pharmacology :
    Several frogs.
    A few rabbits.

HALLE.—

1. Demonstrations in Physiology :
    12 frogs.
    2 pigeons.
    15–20 rabbits.
    2 dogs.

2. Demonstrations in Histology :
    4 frogs.
    2 rabbits.

3. Demonstrations in General Pathology :
    6 frogs.
    4 rabbits ; a few guinea-pigs.
    1–2 dogs.

4. Demonstrations on Brain-diseases.
   2 dogs.

5. Demonstrations in Pharmacology:
   About 60 frogs.
   2–3 rabbits and dogs.

KIEL.—

"Operations of this kind" (experiments on living animals) "may occur in almost all of the lectures. The lecturer on Midwifery is the only one who has not up to the present time carried out such experiments, but would not hesitate to demonstrate them if at any time it should be desirable to do so. The experiments are made as necessity may require, and therefore the number cannot accurately be returned. The larger number occurs, as might be expected, in the course of Physiology." During the year there were about

8–10	experiments on	cold-blooded animals
4	,,	birds.
10–20	,,	rabbits and guinea-pigs.
5	,,	dogs and cats.

KÖNIGSBERG.—

The subjoined numbers are as accurate an account as possible of the animals used :—

1. In the lectures of the Director of the Physiological Institute :
   20 frogs.
   Birds very seldom.
   2 rabbits.

2. In the lectures of another professor :
   2 frogs.
   1 bird.
   3–4 rabbits.
   1 dog.

3. In the lectures on General Pathology :
   10 frogs.

Marburg.—

1. Lectures on Physiology:
    - 14 frogs.
    - 3 birds.
    - 22 rabbits, 2 guinea-pigs.
    - 5 dogs.
2. Lectures on General Pathology:
    - 15 frogs.
    - 6 rabbits and guinea-pigs.
3. Lectures on Pharmacology:
    - 20 frogs.
    - 8 rabbits and guinea-pigs.
    - 5 cats.

V.—*Are the preparatory operations for the lectures, so far as they are necessary, made in the lecture-room before the students, or in the laboratory before the beginning of the particular demonstration?*

The reports of the Faculties state that the preparatory operations are carried out in by far the largest number of cases in the laboratory and before the beginning of the lecture: without any exception, in the Physiological and Pharmacological lectures at Berlin; the Pharmacological lectures at Bonn; the lectures on Physiology and General Pathology at Breslau; those on Physiology, General Pathology, and Pharmacology at Greifswald; those on Physiology and General Pathology at Königsberg; almost without exception in the lectures on Physiology and Pathology at Bonn and Halle; with a few exceptions in the lectures at Göttingen, Kiel, and Marburg.

VI.—*Are special courses of demonstrations involving Vivisection held by the professors or tutors supplementary to the public lectures? If so, what is the number of animals experimented upon?*

From the answers returned, the Universities of Bonn, Breslau, Halle, Göttingen, Kiel, Königsberg, and Marburg have no special courses.

In the Physiological Institute at Berlin there is a special class in which these experiments are made. The number of animals used cannot be ascertained with certainty. Dogs were employed but seldom, and cats scarcely ever.

In Greifswald the Director of the Physiological Institute holds a separate course in the summer, in which, in addition to the ordinary Physiological, Physical, and Chemical experiments, demonstrations are made on animals, but only by the Director himself. The number of animals used is about 40, chiefly frogs. But the larger number of these experiments scarcely come under the head of "vivisection," since the animals were killed, and the demonstrations were made upon organs which retained their irritability after death.

VII.—*How many students attended the Physiological (Pathological, or Pharmacological) Institute during the last two years:* viz.—

a. *In the Microscopical courses.*
b. *In the Chemical courses.*
c. *Those of Experimental Physiology.*

How many of these students were occupied in experiments involving Vivisection and how many in other experimental work?

BERLIN.—

1. Institute of Physiology: in attendance on the

a. Microscopical class	115
b. Class of Practical Chemistry . . .	240
c. Special Physiological class	45

The last figure amounts to 11·25 per cent. of the whole number attending the classes. For the most part the members of these classes were Doctors of Medicine who were visiting Berlin for the purpose of advanced study, many of whom are now themselves professors in other countries; but during the last two sessions some students have been among the number. The former only, and not all of them or always, practised vivisection. In other departments of the Institute not a single student was so employed.

2. Institute of Pathology: in attendance on

a. Class of Demonstrations in Pathological Anatomy and Histology	312
b. Practical course of Pathological Histology .	259
c. Chemical class	79

Students have only exceptionally engaged in experimental researches, and their number in the course of a year scarcely ever exceeded six.

3. Institute of Pharmacology:

One hour of a four-hours' course, which was attended by 341 students, was devoted entirely to practical work, in which no vivisection occurred.

Up to the present time there have been thirteen members of the practical class in the Pharmacological laboratory, opened two sessions ago, and of these, two have occasionally carried on experiments on animals.

BONN.—

1. Physiological Institute:
   - *a.* No microscopical course is held.
   - *b.* The course in Physiological Chemistry contains about 60 students each session: consequently in two years, 240 students.
   - *c.* The course in Experimental Physiology contains about 3–5 students each session: in two years therefore 12–20 students.

   The Practical class worked at questions of Physiological Chemistry or Morphology, but without vivisection.

2. Institute of Pharmacology:

The yearly attendance of students here is six. Vivisections are rare: the larger number of investigations are those made in reference to the effect of drugs, &c., on the body as a whole, or on separate parts; for instance, the effect of atropine and Calabar bean on the pupil, that of chloral hydrate in sleeplessness, that of prussic acid and of poisonous gases. Operations, when necessary on warm-blooded animals, are scarcely ever made by students, and only under very exceptional circumstances.

3. Institute of Pathology:

Six students have worked here, four with the microscope only, two partly microscopically and partly experimentally.

BRESLAU.—

1. Physiological Institute:

a. Microscopical class	189
b. Chemical class	59
c. Experimental work	11
Total	259

Of these 259 students, five only were engaged in experiments on the living animal. Any operations required on warm-blooded creatures were made only by the Director of the Institute himself.

2. Pathological Institute:

In two years 140 students were employed in the course of Microscopy.

GÖTTINGEN.—

a. Microscopical course of the Pathological Institute	81
b. Chemical class of the Physiological Institute	40
c. Pharmacological Institute	40

Four students were employed in the Pathological department in experimental researches, and in the Pharmacological department a few experiments on animals were undertaken in the course of researches for graduation theses.

GREIFSWALD.—

1. Physiological Institute:

Separate courses of work cannot be held for want of room. During the last two years four candidates for the degree of Doctor have carried on experiments on animals for their graduation thesis under the special direction of the head of the department.

2. Pharmacological Institute :

   One assistant and one student only have been engaged in experiments in which the use of animals was needed.

3. Pathological Institute :

   No experiments were made by students. In the last four sessions 215 attended the courses.

HALLE.—

1. Physiological Institute :

   The number of students taking part in the practical demonstrations in the two last sessions was 14 and 9. No vivisection occurred.

2. Histological laboratory :

   In 1882–83, 45 members of the class : no vivisection.

3. Pathological Institute :

   Course of Pathological Histology. Last session, 71 students; in former sessions a less number. No vivisection.

4. Laboratory for Physiological Chemistry :

   Last session there were on the average 10 students. No vivisection.

The report goes on to say that in the above-mentioned institutes, in which opportunities for research were offered to advanced students, especially to those who were candidates for the degree of Doctor, vivisectional experiments were made occasionally, but only under the special oversight of the directors or assistants. The number of workers, and of the animals employed, varies greatly. Months pass by in which no single experiment of the kind is needed ; at other times a large number of animals are necessary for the objects of inquiry.

Kiel.—

1. Physiological Institute:
    - *a.* Class of Embryology, 15.
    - *b.* Classes of Chemistry and Experimental Physiology, together 1 .

    Vivisection was never practised.
2. Pathological Institute:

    Microscopical course, 65.

    Vivisection was never practised.

Königsberg.—

Microscopical course:

Held by the Director of the Physiological Institute	10–20 students
Held by the Director of the Pathological Institute	20–30 ,,
Held by the Professor of Physiology	30–40 ,,

The report makes no mention of courses either experimental or on Physiological Chemistry.

Marburg.—

Physiological Institute:

The practical course is divided into Microscopical, Chemical, and Experimental classes: 134 students have attended the Institute during the last two years. Vivisectional experiments were entirely excluded.

Pathological Institute:

Classes have been held here only in Microscopy.

VIII.—*To what extent are Anæsthetics (Morphia, Chloroform, Chloral, Æther, &c.) employed in Vivisection?*

All the reports of the Faculties agree in stating that, with certain exceptions, anæsthetics are constantly employed. Only in those rare cases in which the object of the experiment would have been directly frustrated were narcotics omitted.